

SLOW method, carbon dioxide bubble volume (mL)

NAME data collector:						Data collector:			
Time (min)	Glucose 1	Sucrose 1	Lactose 1	Lactose+ Lactase 1	Novel 1	Glucose 2	Sucrose 2	Lactose 2	Lactose+ Lactase 2
0									
15									
30									
45									
60									
75									
90									
105									
120									
Resp rate									

**VERSION A**

Write formulas that use all spreadsheet data to calculate yeast respiration rates. The SLOPE of the line tells us the RATE of CO<sub>2</sub> production, so the rate of cell respiration. Using a spreadsheet formula is the preferred method because it uses ALL collected data.

Resp rate calculation =SLOPE( y-values , x-values ) for

=SLOPE(B3:B11,\$A3:\$A11)

=SLOPE( y-values , x-values )

**VERSION B**

The SLOPE tells us the RATE of CO<sub>2</sub> production, so the rate of cellular respiration. Simple version that does NOT use all data but is easy to calculate. This method is not preferred because the results are influenced by the first and last values.

Respiration rate = SLOPE =  $\frac{((\text{Final CO}_2 \text{ volume}) - (\text{Starting CO}_2 \text{ volume}))}{\text{Elapsed time (minutes)}}$

